Climate Change Research at the Energy Commission

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Commission policy establishes direction for climate change research

"The state should require agencies to incorporate climate change mitigation and adaptation strategies in planning and policy documents."

- 2003 Integrated Energy Policy Report

Policy relevance primary focus of Climate Change Research Program

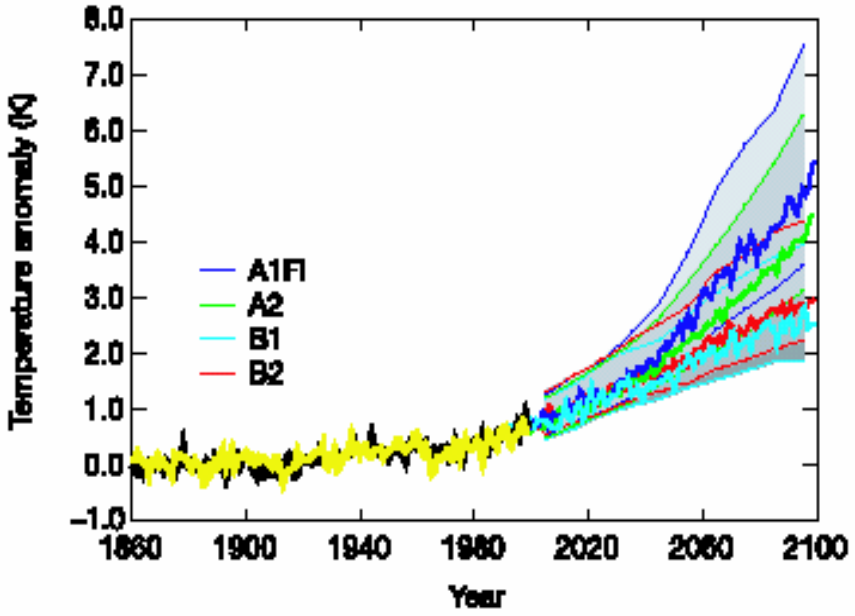
Program Goal

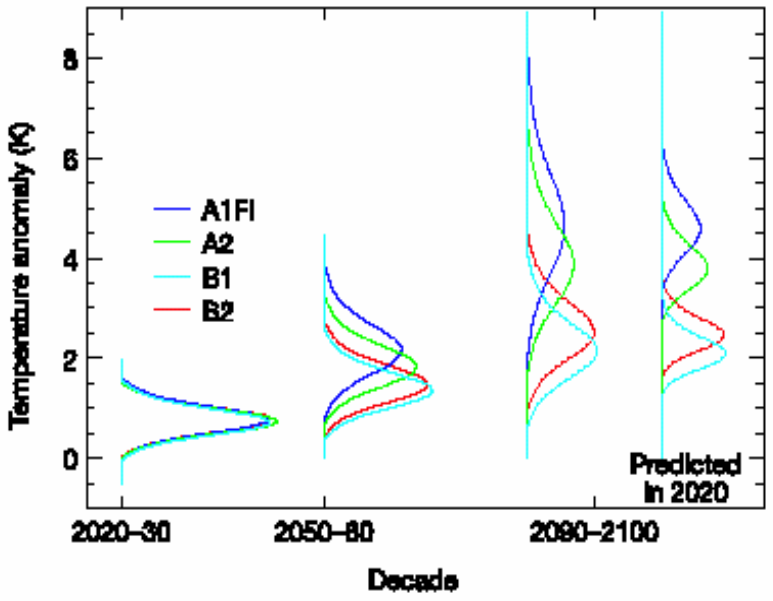
Improve the state-of-science/art regarding climate change and its physical and economic impacts on California. Produce policy relevant research that will allow the state to develop sound mitigation and adaptation strategies.

Important Policy Questions Guide the Research Agenda

- What are plausible climate change scenarios for CA?
- How would climate change (physical impacts) affect CA's environment, public health, and economy?
- What are the merits of different mitigation and adaptation strategies?
- How would climate change affect energy supply and demand?
- How would climate change policies affect the economy?

Existing analyses insufficient for developing a robust state-specific strategy



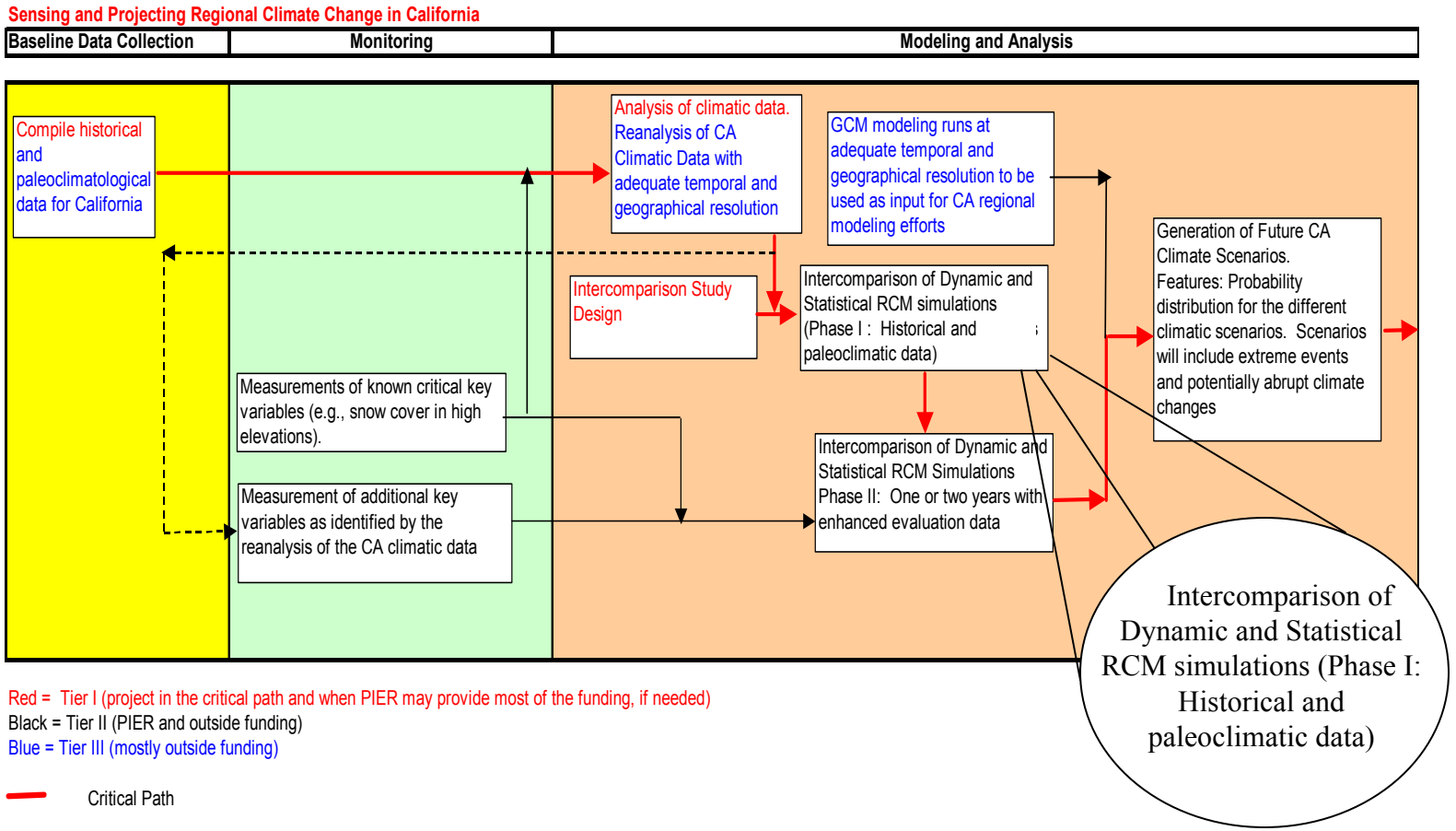


It is very difficult to identify adaptation measures with a wide range of <u>equally plausible</u> scenarios.

Roadmaps basis for a coherent, integrated research program

- Regional Modeling (Larry Gates, LBNL)
- Ecosystem Impacts (Rebecca Shaw, Stanford)
- Water Resources (Maurice Roos, Consultant/CDWR)
- Supply Curves (Mike Rufo, Xenergy)
- Carbon Sequestration in Terrestrial and Geological Formations (Edward Vine and Mark Wilson, CIEE/UC)
- Economic Issues (Alan Sanstad, LBNL)
- Public Health-*Draft* (Jonathan Patz, John Hopkins Univ)
- GHG Inventory Methods-*Draft* (Alex Farrel, UCB; Margaret Torn, LNBL)

Critical Path Analysis forms a framework for implementing the Plan

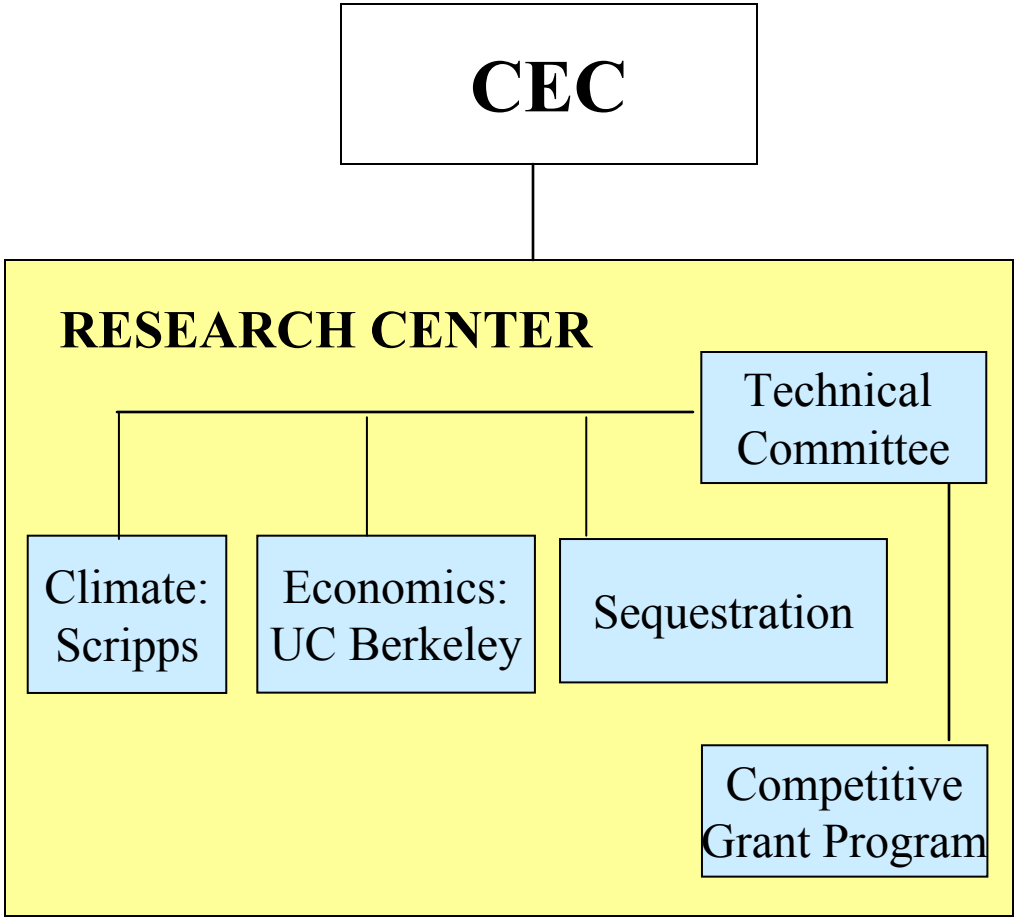


Current Portfolio

Project	Amount ($ thousand)	Contractor/ collaborators
Indirect emissions, metrics, and case studies (three CA entities)	340	LBNL, Registry, Transportation Division
Forest, soil, and geologic sequestration	3,030	Winrock, EPRI, CDF, CDFA, Kearney, UC, DOE, LBNL, LLNL, E2I, DOC (dollar amounts includes 1.6 M DOE match funding)
Climate Monitoring, Analyses, and Modeling	4,947	Scripps/UC San Diego, CDWR, NOAA, NSF
Integrated Economic Analyses	2,800	UC Berkeley, NOAA
Competitive Grant Program (Dynamic Ecosystem Modeling for CA; Enhanced Climate and Hydrological Monitoring for CA; Protocol for Intercomparison of Simulations of CA's Climate)	1,096	Conservation International, NBI, TNC, Stratus Consulting, UCD, UCSB, Stanford; Desert Research Institute, ORNL, DWR; DOE, LLNL
Adaptation to CC for CA Water System: Societal Layers of Adaptations & Impacts	250	UC Davis
Total	12,463	

Research Agenda Integrated through Virtual Center

- **Scripps:** climate monitoring, analyses, and modeling
- **UC Berkeley:** social and economic studies of mitigation and adaptation strategies
- **Sequestration Partnership:** regional terrestrial and geologic carbon storage potential
- **Competitive Grant Program:** key research (e.g. Dynamic Ecosystem Modeling for CA) not addressed by the Core Program



Research products will provide valuable, integrated strategic data and analysis

- Probabilistic Climate Scenarios
- Impacts to critical energy, water and ecological resources and infrastructure
- Supply curves for reducing/mitigating GHG emissions
- Improved dynamic economic modeling of adaptation and mitigation strategies appropriate for California

For More Information

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- **Visit the PIER Research Website at:**
  www.energy.ca.gov/pier/energy/index.html